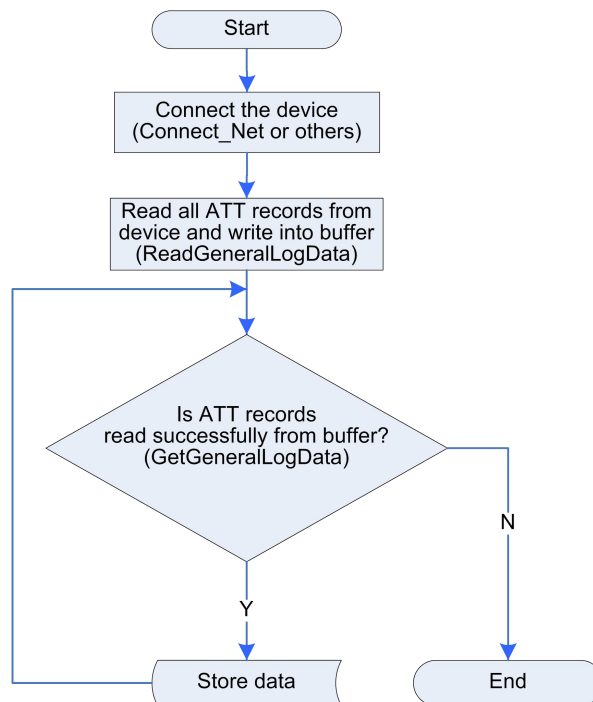# 1   Common Processes
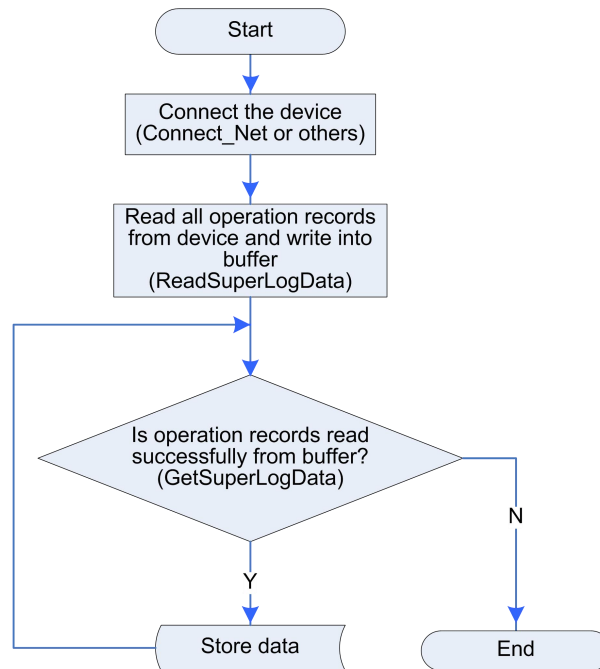
1.1   B&W Series

For details, see the descriptions of the demo program.

1.1.1   Downloading Attendance Records

```
                        ┌──────────────┐
                        │    Start     │
                        └──────┬───────┘
                               │
                        ┌──────▼───────┐
                        │Connect the device│
                        │(Connect_Net or others)│
                        └──────┬───────┘
                               │
                        ┌──────▼───────┐
                        │Read all ATT records from│
                        │device and write into buffer│
                        │(ReadGeneralLogData)│
                        └──────┬───────┘
                               │
                         ◇────▼────◇
                        Is ATT records
                   read successfully from buffer?
                        (GetGeneralLogData)         ──N──► End
                         ◇─────────◇
                               │Y
                        ┌──────▼───────┐
                        │  Store data  │
                        └──────────────┘
```

1.1.2　Downloading Operation Records

```
                          ┌──────────────┐
                          │    Start     │
                          └──────┬───────┘
                                 │
                   ┌─────────────▼─────────────┐
                   │   Connect the device      │
                   │  (Connect_Net or others)  │
                   └─────────────┬─────────────┘
                                 │
                   ┌─────────────▼─────────────┐
                   │  Read all operation records│
                   │  from device and write into│
                   │          buffer            │
                   │     (ReadSuperLogData)     │
                   └─────────────┬─────────────┘
                                 │
                          ◇ Is operation records read ◇
                            successfully from buffer?
                              (GetSuperLogData)        ──── N ────┐
                                 │                                │
                                 Y                                │
                        ┌────────▼────────┐            ┌──────────▼────┐
                        │   Store data    │            │      End      │
                        └─────────────────┘            └───────────────┘
```

1.1.3　Setting Access Control

```
                   ┌──────────────┐
                   │    Start     │
                   └──────┬───────┘
                          │
            ┌─────────────▼─────────────┐
            │   Connect the device      │
            │  (Connect_Net or others)  │
            └─────────────┬─────────────┘
                          │
            ┌─────────────▼─────────────┐
            │   Define time slot        │
            │     (SetTZInfo)           │
            └─────────────┬─────────────┘
                          │
            ◇ Is group time slot used? ◇                ┌─────────────────────────┐
              (UseGroupTimeZone or      ──── Y ────────▶│  Define group time slot  │
                 GetUserTZStr)                          │    (SetGroupTZStr)       │
                          │                             └────────────┬────────────┘
                          N                                          │
            ┌─────────────▼─────────────┐               ┌────────────▼────────────┐
            │   Set personal time       │               │    Set user group        │
            │         slot              │               │    (SetUserGroup)        │
            │     (SetUserTZStr)        │               └────────────┬────────────┘
            └─────────────┬─────────────┘                            │
                          │                             ┌────────────▼────────────┐
                          │                             │  Set open door combination│
                          │                             │    (SetUnlockGroups)     │
                          │                             └────────────┬────────────┘
                          │         ┌──────────────┐                 │
                          └────────▶│     End      │◀────────────────┘
                                    └──────────────┘
```
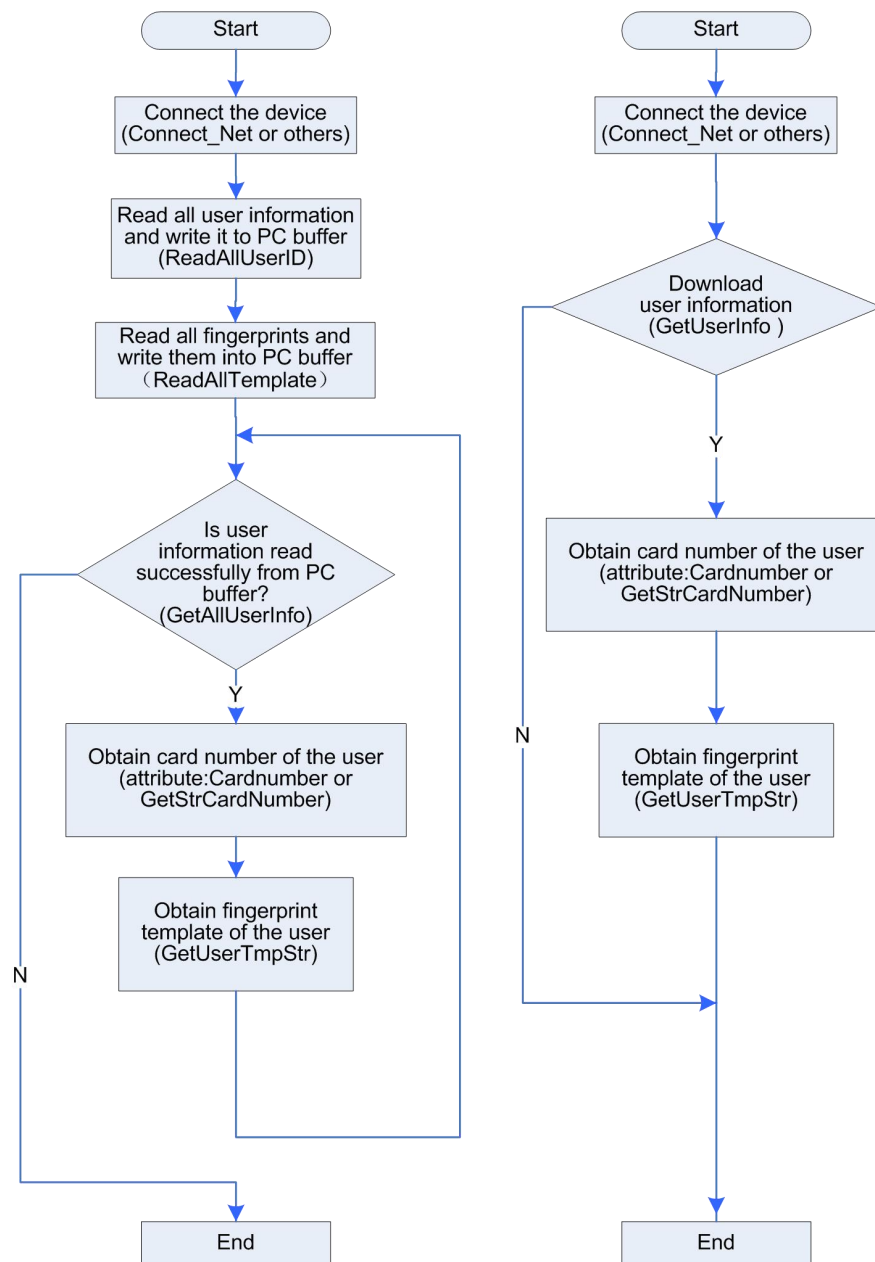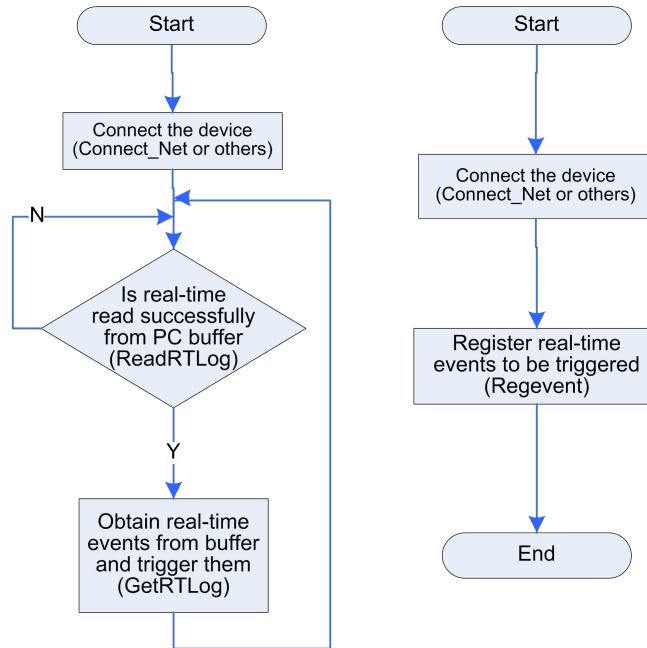
1.1.4 Downloading User Information, and Fingerprint Templates

The left diagram shows the process of downloading the information of all users. The right diagram shows the process of downloading the information of a specified user.
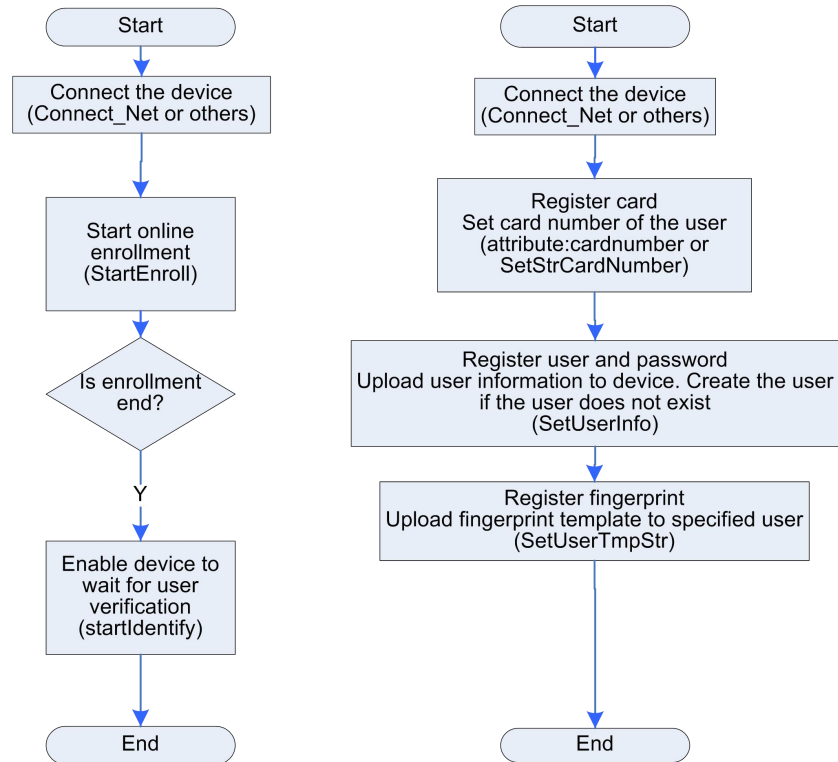
```
[Left Diagram]

Start
  │
  ▼
Connect the device
(Connect_Net or others)
  │
  ▼
Read all user information
and write it to PC buffer
(ReadAllUserID)
  │
  ▼
Read all fingerprints and
write them into PC buffer
（ReadAllTemplate）
  │
  ▼
Is user
information read
successfully from PC
buffer?
(GetAllUserInfo)  ──N──┐
  │ Y                  │
  ▼                    │
Obtain card number of the user
(attribute:Cardnumber or
GetStrCardNumber)
  │
  ▼
Obtain fingerprint
template of the user
(GetUserTmpStr)
  │
  ▼
End
```

```
[Right Diagram]

Start
  │
  ▼
Connect the device
(Connect_Net or others)
  │
  ▼
Download
user information
(GetUserInfo )  ──N──┐
  │ Y                 │
  ▼                   │
Obtain card number of the user
(attribute:Cardnumber or
GetStrCardNumber)
  │
  ▼
Obtain fingerprint
template of the user
(GetUserTmpStr)
  │
  ▼
End
```

1.1.5 Receiving Real-time Events

Real-time events can be received in two modes. The second mode is recommended.

```
        Start                                    Start
          │                                        │
          ▼                                        ▼
  ┌─────────────────┐                      ┌─────────────────┐
  │ Connect the device │                   │ Connect the device │
  │ (Connect_Net or others) │              │ (Connect_Net or others) │
  └─────────────────┘                      └─────────────────┘
          │  ◄──────────┐                           │
   N      ▼             │                           ▼
      ╱─────────╲       │                  ┌─────────────────┐
     ╱ Is real-time ╲    │                  │ Register real-time │
    ╱ read successfully ╲ │                 │ events to be triggered │
    ╲ from PC buffer    ╱ │                 │ (Regevent) │
     ╲ (ReadRTLog)   ╱    │                 └─────────────────┘
      ╲─────────╱         │                          │
          │ Y             │                          ▼
          ▼               │                      ┌───────┐
  ┌─────────────────┐     │                      │  End  │
  │ Obtain real-time │     │                      └───────┘
  │ events from buffer │   │
  │ and trigger them │─────┘
  │ (GetRTLog) │
  └─────────────────┘
```
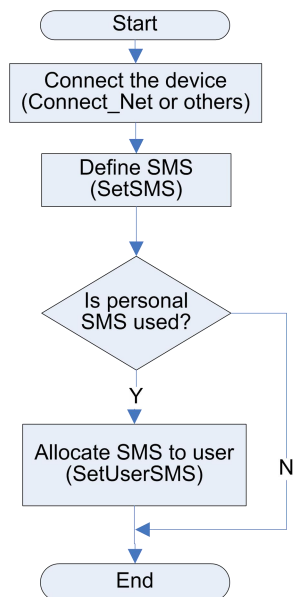
1.1.6 Enrolling Users Online (Uploading Information, and Fingerprint Templates of Users)

There are two online user enrollment modes. The left diagram shows the process in which the device accesses the enrollment interface to enroll a user after being connected. The right diagram shows the process of creating a user on the device and uploading the card number, password, and fingerprint information for the user (that is, enrolling a card user, a password user, and a fingerprint user).

```
        Start                              Start

Connect the device              Connect the device
(Connect_Net or others)         (Connect_Net or others)

                                   Register card
 Start online                  Set card number of the user
 enrollment                     (attribute:cardnumber or
 (StartEnroll)                      SetStrCardNumber)

                               Register user and password
Is enrollment              Upload user information to device. Create the user
   end?                             if the user does not exist
                                        (SetUserInfo)
      Y
                                   Register fingerprint
Enable device to          Upload fingerprint template to specified user
 wait for user                       (SetUserTmpStr)
 verification
 (startIdentify)

        End                              End
```

1.1.7   Uploading Short Messages

```
                    Start

           Connect the device
           (Connect_Net or others)

              Define SMS
               (SetSMS)

              Is personal
              SMS used?
                              N
                 Y
          Allocate SMS to user
            (SetUserSMS)

                    End
```
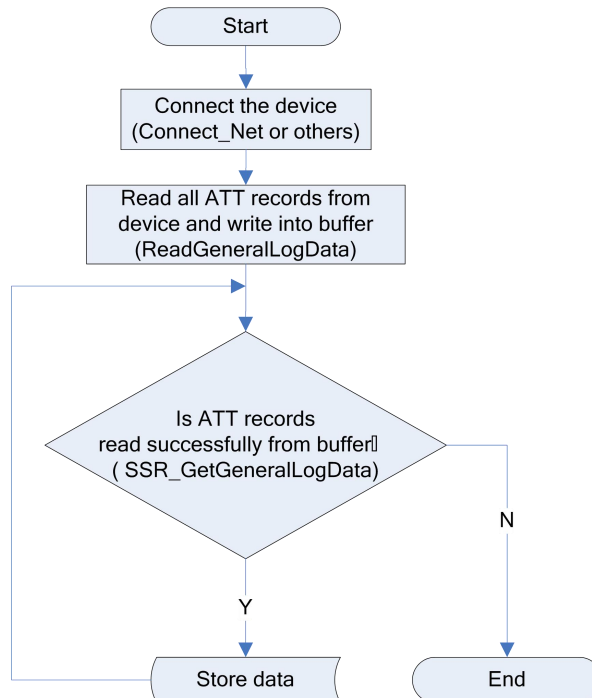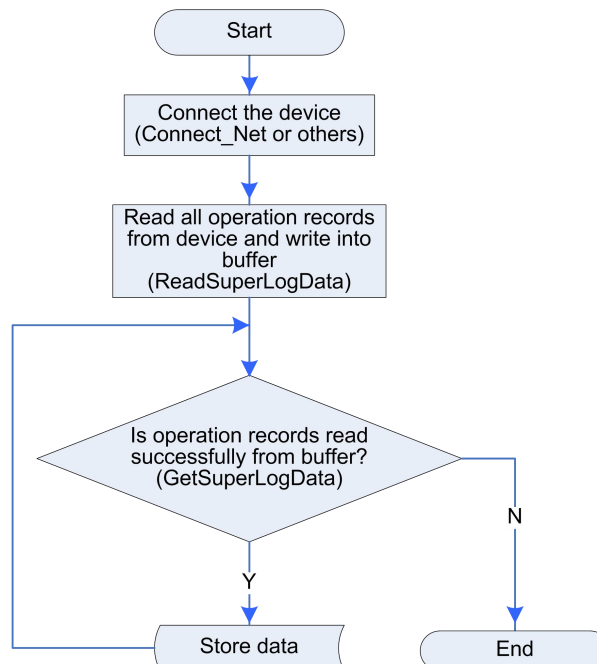
1.2   iFace Series

For details, see the descriptions of the demo program.

1.2.1   Downloading Attendance Records

```
                    ┌─────────────┐
                    │    Start    │
                    └──────┬──────┘
                           ↓
                    ┌──────────────────┐
                    │ Connect the device│
                    │(Connect_Net or others)│
                    └──────┬───────────┘
                           ↓
                    ┌──────────────────┐
                    │Read all ATT records from│
                    │device and write into buffer│
                    │(ReadGeneralLogData)│
                    └──────┬───────────┘
                           ↓
                    ╱─────────────────╲
                   ╱  Is ATT records    ╲
                  ╱ read successfully from buffer ╲ ──N──→ ┌──────┐
                   ╲ ( SSR_GetGeneralLogData)     ╱         │ End  │
                    ╲─────────┬───────╱           └──────┘
                              │Y
                              ↓
                       ┌─────────────┐
                       │ Store data  │
                       └─────────────┘
```

1.2.2   Downloading Operation Records

```
                    ┌─────────────┐
                    │    Start    │
                    └──────┬──────┘
                           ↓
                    ┌──────────────────┐
                    │ Connect the device│
                    │(Connect_Net or others)│
                    └──────┬───────────┘
                           ↓
                    ┌──────────────────┐
                    │Read all operation records│
                    │from device and write into│
                    │         buffer          │
                    │(ReadSuperLogData)│
                    └──────┬───────────┘
                           ↓
                    ╱─────────────────╲
                   ╱ Is operation records read ╲
                  ╱ successfully from buffer? ╲ ──N──→ ┌──────┐
                   ╲  (GetSuperLogData)       ╱         │ End  │
                    ╲─────────┬───────╱           └──────┘
                              │Y
                              ↓
                       ┌─────────────┐
                       │ Store data  │
                       └─────────────┘
```

1.2.3 Setting Access Control

```
                          ┌──────────────┐
                          │    Start     │
                          └──────┬───────┘
                                 │
                    ┌────────────▼────────────┐
                    │   Connect the device    │
                    │  (Connect_Net or others)│
                    └────────────┬────────────┘
                                 │
                    ┌────────────▼────────────┐
                    │    Define time zone     │
                    │      (SetTZInfo)        │
                    └────────────┬────────────┘
                                 │
                          ◇──────────────◇
                          Is group time zone used?       ┌──────────────────────┐
                         (UseGroupTimeZone or   ──Y──▶   │ Define group time zone│
                              GetUserTZStr)               │    (SetGroupTZStr)    │
                          ◇──────────────◇               └───────────┬──────────┘
                                 │                                    │
                                 N                       ┌────────────▼─────────┐
                                 │                       │    Set user group    │
                    ┌────────────▼────────────┐          │    (SetUserGroup)    │
                    │   Set personal time     │          └────────────┬─────────┘
                    │         zone            │                       │
                    │     (SetUserTZStr)      │          ┌────────────▼──────────────┐
                    └────────────┬────────────┘          │ Set open door combination │
                                 │                       │   (SSR_SetUnlockGroup)    │
                                 │                       └────────────┬──────────────┘
                                 │       ┌──────────┐                 │
                                 └──────▶│   End    │◀────────────────┘
                                         └──────────┘
```
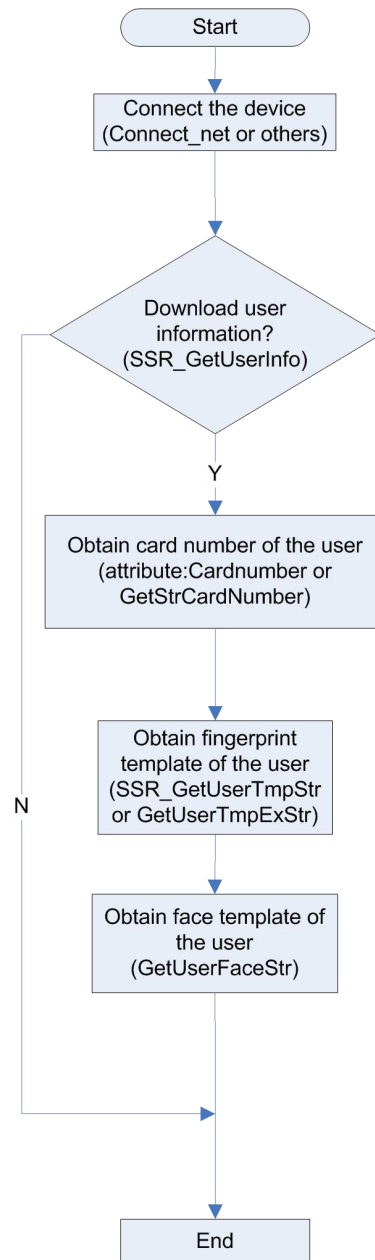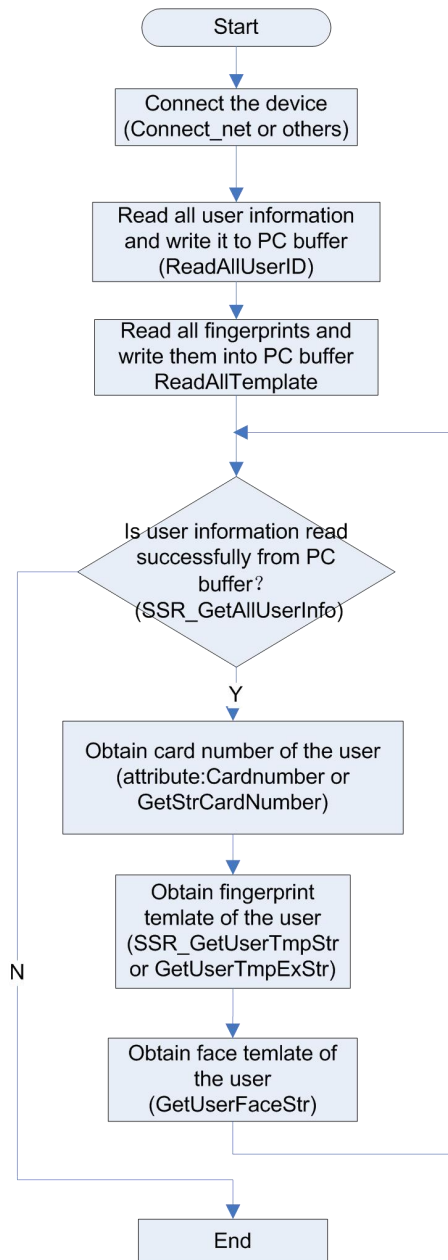
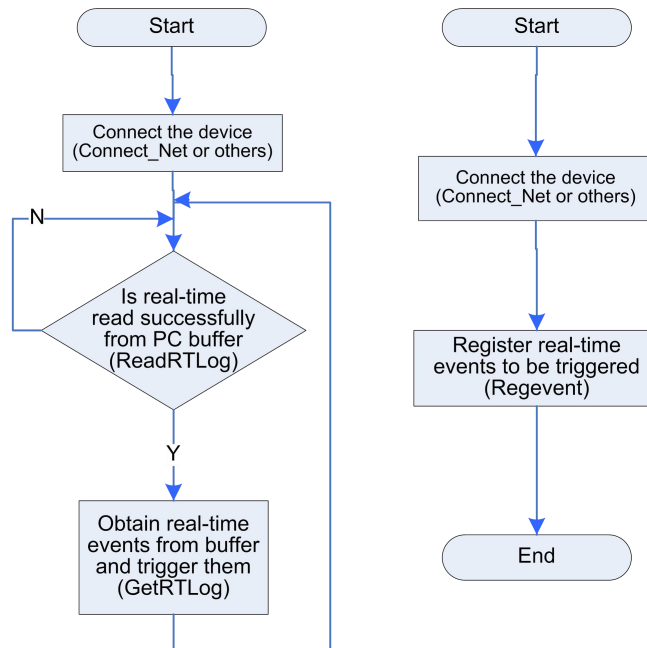### 1.2.4 Downloading User Information, Fingerprint Templates, or Face Templates

The left diagram shows the process of downloading the information of all users. The right diagram shows the process of downloading the information of a specified user.

Left flowchart:

Start

↓

Connect the device
(Connect_net or others)

↓

Read all user information
and write it to PC buffer
(ReadAllUserID)

↓

Read all fingerprints and
write them into PC buffer
ReadAllTemplate

↓

Is user information read
successfully from PC
buffer？
(SSR_GetAllUserInfo)

— N →

Y ↓

Obtain card number of the user
(attribute:Cardnumber or
GetStrCardNumber)

↓

Obtain fingerprint
temlate of the user
(SSR_GetUserTmpStr
or GetUserTmpExStr)

↓

Obtain face temlate of
the user
(GetUserFaceStr)

↓

End

Right flowchart:

Start

↓

Connect the device
(Connect_net or others)

↓

Download user
information?
(SSR_GetUserInfo)

— N →

Y ↓

Obtain card number of the user
(attribute:Cardnumber or
GetStrCardNumber)

↓

Obtain fingerprint
template of the user
(SSR_GetUserTmpStr
or GetUserTmpExStr)

↓

Obtain face template of
the user
(GetUserFaceStr)

↓

End
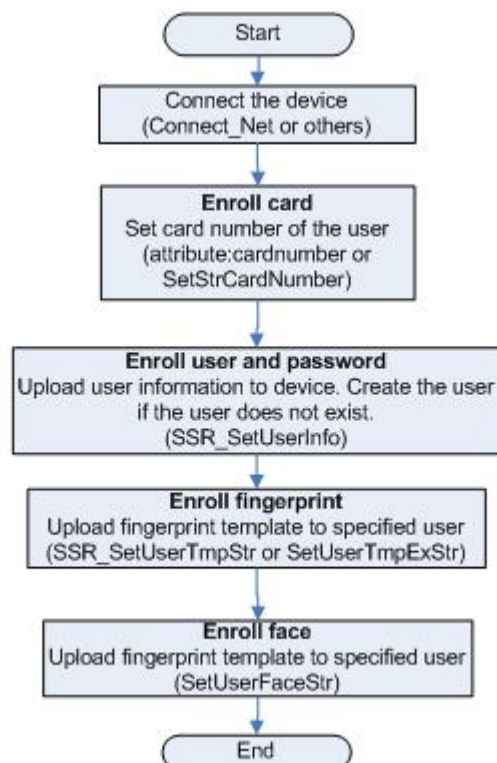
1.2.5 Receiving Real-time Events

Real-time events can be received in two modes. The second mode is recommended.

```
        Start                            Start
          │                                │
          ▼                                ▼
  Connect the device               Connect the device
  (Connect_Net or others)          (Connect_Net or others)
          │                                │
   N──────┤◄──────┐                        ▼
          ▼       │                 Register real-time
     Is real-time │                 events to be triggered
   read successfully                      (Regevent)
    from PC buffer │                        │
     (ReadRTLog)   │                        ▼
          │        │                      End
          Y        │
          ▼        │
   Obtain real-time│
  events from buffer│
   and trigger them │
     (GetRTLog)─────┘
```

1.2.6 Enrolling Users Online (Uploading Information, Fingerprint Templates, and Face Templates of Users)

The following diagram shows the process of creating a user on the device and uploading the card number, password, and fingerprint information for the user (that is, enrolling a card user, a password user, and a fingerprint user).

```
              Start
                │
                ▼
       Connect the device
       (Connect_Net or others)
                │
                ▼
           Enroll card
       Set card number of the user
        (attribute:cardnumber or
           SetStrCardNumber)
                │
                ▼
     Enroll user and password
   Upload user information to device. Create the user
            if the user does not exist.
             (SSR_SetUserInfo)
                │
                ▼
          Enroll fingerprint
   Upload fingerprint template to specified user
   (SSR_SetUserTmpStr or SetUserTmpExStr)
                │
                ▼
            Enroll face
   Upload fingerprint template to specified user
             (SetUserFaceStr)
                │
                ▼
              End
```

1.3 TFT Series

For details, see the descriptions of the demo program.

1.3.1 Downloading Attendance Records

```
                    ┌─────────────┐
                    │    Start    │
                    └─────────────┘
                           │
                           ▼
                 ┌──────────────────────┐
                 │  Connect the device  │
                 │ (Connect_Net or others)│
                 └──────────────────────┘
                           │
                           ▼
                 ┌──────────────────────┐
                 │ Read all ATT records from│
                 │ device and write into buffer│
                 │  (ReadGeneralLogData)│
                 └──────────────────────┘
                           │
                           ▼
                      ◇ Is ATT records
                        read successfully from buffer?
                        (SSR_GetGeneralLogData)  ───N──→
                           │
                           Y
                           ▼
                   ┌──────────────┐        ┌──────────┐
                   │  Store data  │        │   End    │
                   └──────────────┘        └──────────┘
```
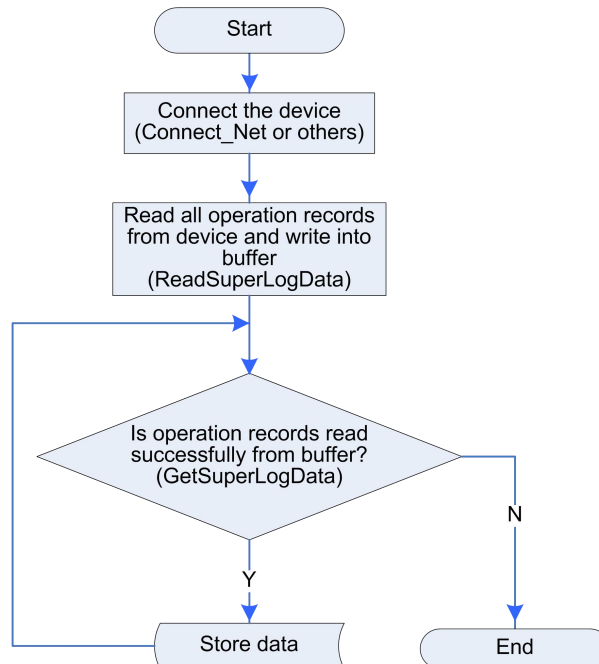
1.3.2 Downloading Operation Records

```
                    ┌─────────────┐
                    │    Start    │
                    └─────────────┘
                           │
                           ▼
                 ┌──────────────────────┐
                 │  Connect the device  │
                 │ (Connect_Net or others)│
                 └──────────────────────┘
                           │
                           ▼
                 ┌──────────────────────┐
                 │ Read all operation records│
                 │ from device and write into│
                 │         buffer       │
                 │  (ReadSuperLogData)  │
                 └──────────────────────┘
                           │
                           ▼
                      ◇ Is operation records read
                        successfully from buffer?
                        (GetSuperLogData)  ───N──→
                           │
                           Y
                           ▼
                   ┌──────────────┐        ┌──────────┐
                   │  Store data  │        │   End    │
                   └──────────────┘        └──────────┘
```

1.3.3   Setting Access Control

```
                        ┌──────────────┐
                        │    Start     │
                        └──────┬───────┘
                               │
                               ▼
                    ┌─────────────────────┐
                    │ Connect the device  │
                    │  (Connect_Net or    │
                    │      others)        │
                    └──────────┬──────────┘
                               │
                               ▼
                    ┌─────────────────────┐
                    │  Define time slot   │
                    │     (SetTZInfo)     │
                    └──────────┬──────────┘
                               │
                               ▼
                    ╱◇╲ Is group time slot used?        ┌─────────────────────┐
                   ◇ (UseGroupTimeZone or ◇──Y──────────▶│ Define group time slot│
                    ╲  GetUserTZStr)  ╱                  │   (SetGroupTZStr)    │
                        ╲    ◇    ╱                       └──────────┬──────────┘
                          │                                         │
                          N                                         ▼
                          ▼                               ┌─────────────────────┐
              ┌─────────────────────┐                     │   Set user group    │
              │  Set personal time  │                     │   (SetUserGroup)    │
              │        slot         │                     └──────────┬──────────┘
              │   (SetUserTZStr)    │                                │
              └──────────┬──────────┘                                ▼
                         │                            ┌────────────────────────────┐
                         │                            │ Set open door combination  │
                         │                            │  (SSR_SetUnlockGroups)     │
                         │                            └──────────────┬─────────────┘
                         │          ┌──────────┐                     │
                         └─────────▶│   End    │◀────────────────────┘
                                    └──────────┘
```
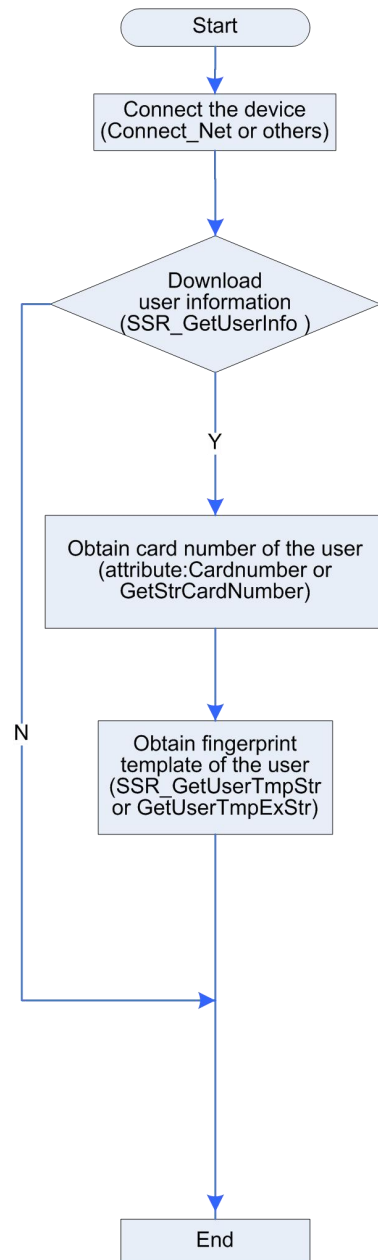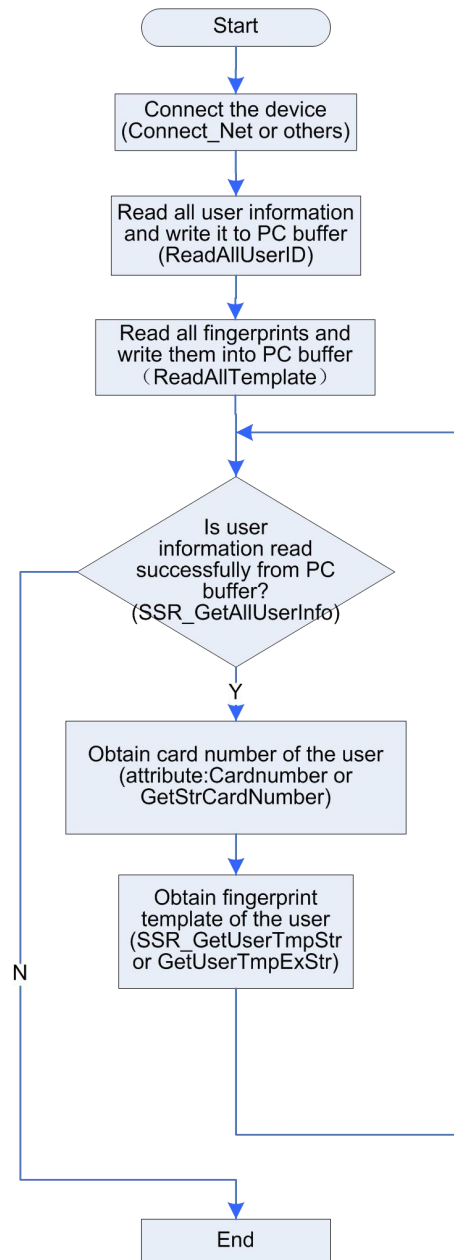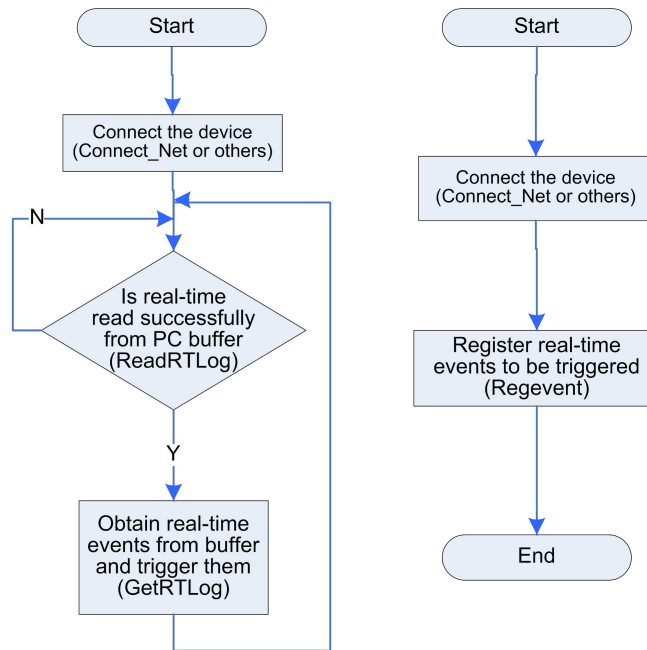
1.3.4   Downloading User Information, or Fingerprint Templates

The left diagram shows the process of downloading the information of all users. The right diagram shows the process of downloading the information of a specified user.

```
          Start                                      Start

  Connect the device                       Connect the device
  (Connect_Net or others)                  (Connect_Net or others)

  Read all user information
  and write it to PC buffer                    Download
      (ReadAllUserID)                     user information
                                          (SSR_GetUserInfo )

  Read all fingerprints and
  write them into PC buffer
     (ReadAllTemplate)                              Y

                                         Obtain card number of the user
         Is user                          (attribute:Cardnumber or
   information read                           GetStrCardNumber)
  successfully from PC
      buffer?
  (SSR_GetAllUserInfo)

                                            Obtain fingerprint
            Y                               template of the user
                                           (SSR_GetUserTmpStr
  Obtain card number of the user           or GetUserTmpExStr)
   (attribute:Cardnumber or
       GetStrCardNumber)


     Obtain fingerprint
     template of the user
    (SSR_GetUserTmpStr
    or GetUserTmpExStr)

                                 N

   N


          End                                       End
```
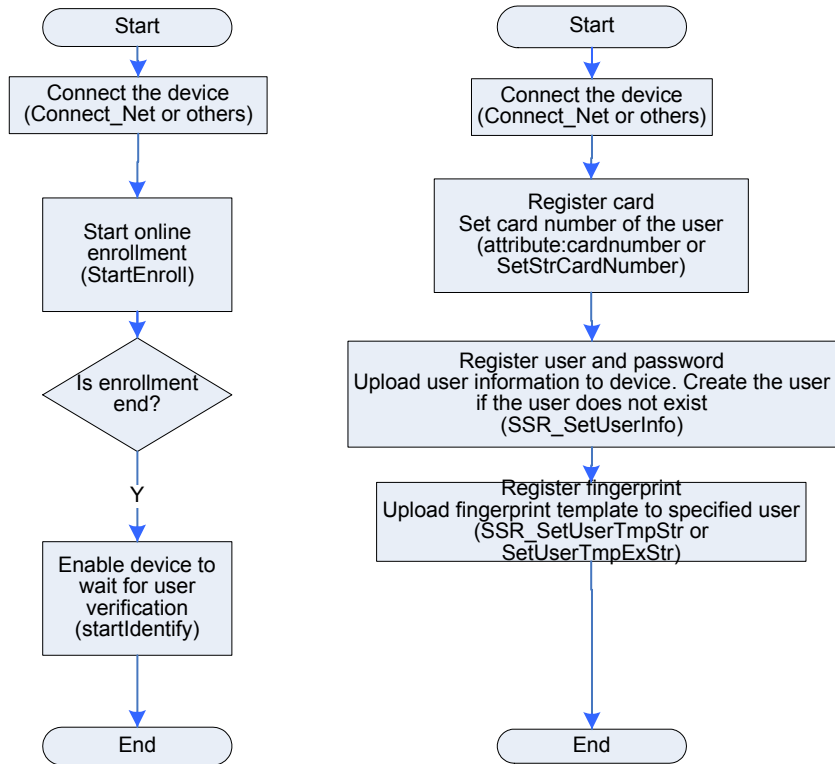
1.3.5   Receiving Real-time Events

Real-time events can be received in two modes. The second mode is recommended.

```
Start                                    Start
  │                                        │
  ▼                                        ▼
Connect the device                   Connect the device
(Connect_Net or others)              (Connect_Net or others)
  │                                        │
  ▼                                        ▼
Is real-time                         Register real-time
read successfully  ──N──              events to be triggered
from PC buffer                        (Regevent)
(ReadRTLog)                               │
  │ Y                                     ▼
  ▼                                      End
Obtain real-time
events from buffer
and trigger them
(GetRTLog)
```

1.3.6   Enrolling Users Online (Uploading Information,and Fingerprint Templates of Users)

There are two online user enrollment modes. The left diagram shows the process in which the device accesses the enrollment interface to enroll a user after being connected. The right diagram shows the process of creating a user on the device and uploading the card number, password, and fingerprint information for the user (that is, enrolling a card user, a password user, and a fingerprint user).

```
   ┌──────────┐                      ┌──────────┐
   (   Start  )                      (   Start  )
   └────┬─────┘                      └────┬─────┘
        │                                 │
┌───────▼──────────┐            ┌─────────▼─────────┐
│ Connect the device│            │ Connect the device│
│(Connect_Net or others)│        │(Connect_Net or others)│
└───────┬──────────┘            └─────────┬─────────┘
        │                                 │
┌───────▼──────────┐            ┌─────────▼──────────────┐
│ Start online     │            │ Register card          │
│ enrollment       │            │ Set card number of the user│
│ (StartEnroll)    │            │ (attribute:cardnumber or│
└───────┬──────────┘            │ SetStrCardNumber)      │
        │                       └─────────┬──────────────┘
     ◇──▼──◇                              │
    ◇ Is enrollment ◇         ┌───────────▼──────────────────┐
    ◇   end?       ◇          │ Register user and password   │
     ◇─────◇                  │ Upload user information to device. Create the user│
        │                     │ if the user does not exist   │
        Y                     │ (SSR_SetUserInfo)            │
        │                     └───────────┬──────────────────┘
┌───────▼──────────┐                      │
│ Enable device to │          ┌───────────▼──────────────────┐
│ wait for user    │          │ Register fingerprint         │
│ verification     │          │ Upload fingerprint template to specified user│
│ (startIdentify)  │          │ (SSR_SetUserTmpStr or        │
└───────┬──────────┘          │ SetUserTmpExStr)             │
        │                     └───────────┬──────────────────┘
   ┌────▼─────┐                           │
   (   End    )                      ┌────▼─────┐
   └──────────┘                      (   End    )
                                     └──────────┘
```

1.3.7   Uploading Short Messages

```
              ┌──────────┐
              (   Start  )
              └────┬─────┘
                   │
        ┌──────────▼──────────┐
        │ Connect the device  │
        │(Connect_Net or others)│
        └──────────┬──────────┘
                   │
        ┌──────────▼──────────┐
        │ Define SMS          │
        │ (SetSMS)            │
        └──────────┬──────────┘
                   │
              ◇────▼────◇
             ◇ Is personal ◇────────┐
             ◇ SMS used?  ◇         │
              ◇────┬────◇           │
                   │                │
                   Y                │
                   │                │
        ┌──────────▼──────────┐     │
        │ Allocate SMS to user│    N│
        │ (SSR_SetUserSMS)    │     │
        └──────────┬──────────┘     │
                   │◄───────────────┘
              ┌────▼─────┐
              (   End    )
              └──────────┘
```